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THAT WHICH IS CLAIMED IS:

1. The method of synthesizing fluoromethyl-1,1,1,-3,3,3-hexafluoroisopropyl ether which comprises adding hexafluoroisopropyl alcohol to a mixture comprising a stoichiometric excess of formaldehyde and hydrogen fluoride, plus sufficient sulfuric acid to sequester most of the water produced by the reaction, said mixture being maintained at a temperature of at least 57°C. to cause vapor formation by boiling of the fluoromethylhexafluoroisopropyl ether formed; and collecting and condensing said vapor.
2. The method of Claim 1 including the step of thereafter purifying fluoromethylhexafluoroisopropyl ether from said condensed vapor.
3. The method of Claim 1 in which said formaldehyde is paraformaldehyde.
4. The method of Claim 1 in which said mixture is maintained at a temperature of 60° to 70°C.

5. The method of ^{Claim 1} in which said hexafluoro-isopropyl alcohol is added on a continuous, gradual basis.

6. The method of ^{Claim 1} in which at least a 10 percent molar excess of paraformaldehyde is present, based on the hexafluoroisopropyl alcohol added.

7. The method of ^{Claim 6} in which at least a 400 percent molar excess of hydrogen fluoride is present, based on the hexafluoroisopropyl alcohol added.

8. The method of ^{Claim 7} in which a greater weight of generally anhydrous (at least 95 percent) sulfuric acid is present when compared with the weight of the paraformaldehyde present.

9. The method of ^{Claim 1} in which from 10 to 100 molar percent excess of paraformaldehyde and 400 to 1000 molar percent excess of hydrogen fluoride is present.

10. The method of ~~claim~~ 9 in which a 50 to 200 percent greater weight of generally anhydrous (at least 95 percent) sulfuric acid is present, compared with the weight of the paraformaldehyde present.

11. The method of synthesizing fluoromethyl-1,1,-1,3,3,3-hexafluoroisopropyl ether which comprises adding 1,1,1,3,3,3-hexafluoroisopropyl alcohol to a mixture comprising a stoichiometric excess of paraformaldehyde and hydrogen fluoride, plus sufficient sulfuric acid to sequester most of the water produced by the reaction, said mixture being maintained at a temperature of 60 to 70 degrees to cause vapor formation by boiling of the fluoromethyl-1,1,1,3,3,3-hexafluoroisopropyl ether formed; collecting and condensing said vapor; and thereafter purifying by distillation said fluoromethyl-1,1,1,3,3,3-hexafluoroisopropyl ether from said condensed vapor, said hexafluoroisopropyl alcohol being added to the mixture on a continuous, gradual basis.

12. The method of ~~Claim~~ 11 in which at least a 10 percent molar excess of paraformaldehyde is present, based on the hexafluoroisopropyl alcohol added.

13. The method of ^{claim 12} in which at least a 400 percent molar excess hydrogen fluoride is present, ^B based on the hexafluoroisopropyl alcohol added.

14. The method of ^{Claim 13} in which a greater weight of generally anhydrous (at least 95%) sulfuric acid is present, compared with the weight of ^B the paraformaldehyde present.

15. The method of ^{Claim 11} in which a ^{10 to 100} mole percent excess of paraformaldehyde and a ^{400 to 1000} mole percent excess of hydrogen fluoride is present.

16. The method of ^{Claim 15} in which a ^{50 to 200} percent greater weight of generally anhydrous (at least 95 percent) sulfuric acid is present, compared with the weight of the paraformaldehyde present.